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ABSTRACT

A pair comparison scale for measuring aesthetic judgment which could be used with four and five year old children was developed by having art experts independently judge for "aesthetic quality" color slides representing a variety of stimuli on an eleven-point successive category scale. The scale was administered to forty children cn two occasions six weeks apart. The resulting data indicated that the scale is a valid measure. The reliability was not high enough tc recommend the use of the scale on an individual basis, but was adequate for measuring group differences in research studies with very young children. Descriptive information for each pair of slides used as an item in the scale is included. (Author)

ED 048351

A PRELIMINARY PAIR COMPARISON TEST FOR MEASURING AESTHETIC JUDGMENT IN YOUNG CHILDREN

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and

G.C. Helmstadter

Purpose

The purpose of this study was to develop a practical scale for measuring aesthetic judgment which could be used with children as young as four years old.

Method

A series of one-hundred-and-twenty color slides were prepared which depicted paintings, sculpture, furniture, telephones and common household items. These initial stimuli were selected to represent a wide range of aesthetic quality and chosen in such a way that each variety of stimuli included some slides thought to represent "high aesthetic quality" and some thought to represent "low aesthetic quality."

The entire set of slides was then submitted to ten art experts who independently judged each stimulus as to its "aesthetic quality" on an eleven-point successive category scale. A frequency distribution showing the number of times each slide was placed in each category was then prepared and the median of this frequency distribution calculated for each slide. Using this data, thirty-

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eight pairs of slides were selected to serve as items in a pair comparison scale. Each item of the preliminary scale thus consisted of two slides, matched in content, such that one slide was judged by experts to be of higher aesthetic quality than the other.

In addition to the median difference in scale value, slides were paired only when their frequency distributions showed little overlap or when a large proportion of the art experts judged one stimulus as higher in aesthetic quality than the other. This procedure provided assurance that the scale had instrinsic validity. The data describing each pair of slides used in the scale is presented in Table 1.

To be certain that the scale was feasible with four-year olds, it was administered to a pilot sample of five children at that age. The results of this pilot application were compared with those which might be expected by chance as represented by the binomial distribution. From this information it was concluded that the scale was indeed feasible for use with four-year-old children, was producing other than chance results, and was likely to yield a sufficiently wide range of scores to be useful as a measure of aesthetic judgment.

A final application of this preliminary scale was then made by administering it to an additional forty children between four and five years of age on two occasions six weeks apart. From this application both test-retest and split-half reliabilities were computed.

Table 1
Descriptive information for each pair of slides used as a an item in the Taylor Helmstadter scale of aesthetic judgment

SLIDE #	ITEM #	SLIDE DESCRIPTION	CONTENT CATEGORY	Slide Position	Proportion of Judges Picking	Median Scale Values	DISTRIBUTION OF SCALE CATEGORY JUDGMENTS 1	2	3	4	5	6	7	8	9	10	11
51	1	Balinesian Dancer	Sculpture	R	.70	9.0						2		3	3	1	1
16		Sculptured Candlebra		L	.30	4.3	2	1	1	3			1			1	1
2	2	Japanese Face Mask	Sculpture	L	.75	9.7				1	1			1	3	2	2
62		Kukla, Fran & Ollie Puppet		R	.25	3.0	3	2	2			1			2		
63	3	Degas Dancer	Sculpture	R	.90	9.0						1	1	3	2	1	2
109		Statue of Liberty		L	.10	4.0	2	2	1	1	1	1	1	1			
81	4	Archipenko Horse	Sculpture	R	.85	9.2	1	1						2	5	1	
21		Marisol Horse		L	.15	5.5	2		1	1	2			2	1	1	
19	5	Queen Nefrotete	Mixed	R	.95	9.5							2	2	2		4
20		Etching The Women		L	.05	5.0		4		1	1		1	2	1		
61	6	Matisse Self Portrait	Paintings	L	.90	10.0							1	1	3	4	1
18		Religious Painting Christ With the Physicians		R	.10	4.0	1	2	2	1	2			1		1	
110	7	Archipeuko Sculpture	Mixed	L	.95	8.5			1		1		1		1	2	2
96		Christ With the Physicians		R	.05	2.3	4	3	1		1	1	1				
69	8	African Sculpture	Mixed	L	1.0	9.0						2	1	2	1	3	1
33		Copley Family Portrait		R	0.0	4.0	2	3		2	2		1				
90	9	Folk Puppet	Mixed	L	.80	7.0			2		2	1	3	1		1	
85		Lefebre Young Bride		R	.20	2.8	2	4	3			2	1				
54	10	Knoll Table	Furniture	L	.90	9.0			1		1	1		2	2	1	1
8		Goodwill Table		R	.10	1.7	7	2						1			
72	11	Walt Disney Snow White	Paintings	L	1.0	8.0					1	1	3	2	2	1	
12		Manet Luncheon on Grass		R	.00	2.3	4	3	2				1				
68	12	Lamp	Furniture	R	.75	7.7	3								1		
82		Goodwill Lamp		L	.25	2.3	4	3		1			3	2	1	1	
40	13	Porcelain Bowl	Ceramics	R	.75	6.5	2	1			2		2	1	1	1	1
119		Ordinary Goodwill Bowl		L	.25	2.0	5	1	1	2						1	

Table 1 continued

SLIDE #	ITEM #	SLIDE DESCRIPTION	CONTENT CATEGORY	Slide Position	Proportion of Judges Picking	Median Scale Values	DISTRIBUTION OF SCALE CATEGORY JUDGMENTS 1	2	3	4	5	6	7	8	9	10	11
38	14	Designed Silverware	Silverware	R	.70	8.7	2	1			2		2	1	1	1	
118		Ordinary Silverware		L	.30	2.0	5	2	2			1					
36	15	Princess Telephone	Telephones	R	.80	6.0	2	1		1	1	2	1		2		
117		Black Telephone		L	.20	2.5	4	2	1		3						
116	16	Knoll Chair	Furniture	L	.80	8.0	2	1				1	1	3	1	1	
32		Patio Chair		R	.20	2.0	5	2	2	1							
30	17	African Sculpture	Primitive Art	R	.95	9.0						1	1	3	1	1	3
115		Eskimo Sculpture		L	.05	6.0		2	1		2	1		3	1		
22	18	Picasso Woman	Paintings	L	.90	10.0			1			1		2	1	3	2
27		Gaudens Children		R	.10	3.5	3	1	2		1	1	1				1
24	19	Designed Lamp	Furniture	R	.95	10.0	1	1			1	1		1	1	3	1
112		Poorly Designed Lamp		L	.05	1.8	6	2	2								
105	20	Reuben's Meadow	Paintings	L	.85	7.0	1	1		1	1	1	1	1	2	1	
7		Lefebre Christ With Children		R	.15	2.5	4	2	2	1	1						
25	21	Winslow Homer Sailboats	Paintings	R	.80	7.0	1	1			1	2	2		1	2	
111		Sailboats		L	.20	3.0	4	1	1			2	1			1	
104	22	Medieval Mosaic	Mixed	L	1.0	6.7			2		1	3		2	1	1	
71		Man of Sorrows		R	.00	2.0	5	2		2	1						
102	23	Veneer Woman Pouring Milk	Paintings	R	.80	9.5				1			2		4	2	1
4		Goss Man Blowing Bubbles		L	.20	5.5		1	2		4	1		1			1
101	24	Designer Chair	Furniture	R	.80	8.0	1	2				1	1	1	1	2	1
87		Ordinary Chair		L	.20	3.0	2	3	2		1	1			1		
99	25	Grant Wood DAR	Paintings	R	.75	8.5		2				1		4	1		2
79		Rosetti Lute Players		L	.25	4.5	4			2	1		1				2
60	26	Van Gogh Starry Night	Mixed	R	1.0	10.0						1	1	1	2	2	3
56		Graphic Poster		L	.00	3.0	4	1	3	1			1				
84	27	Japanese Painting	Paintings	L	.90	8.0	1			1	1	1	1	1	2	1	1
66		Hildalgo Mexican Scene		R	.10	2.5	4	2	2	1	1						

Table 1 continued

SLIDE #	ITEM #	SLIDE DESCRIPTION	CONTENT CATEGORY	Slide Position	Proportion of Judges Picking	Median Scale Values	DISTRIBUTION OF SCALE CATEGORY JUDGMENTS 1	2	3	4	5	6	7	8	9	10	11
49	28	Leonardo da Vinci Madonna and Child		R	.90	6.0	1	1			3	2		1	1	1	
74		Girl, with Dogs	Paintings	L	.10	2.5	3	4		2		1					
95	29	Pepsi With Crushed Ice		L	.60	8.5	1	2	1					4		1	1
65		Design Poster	Graphics	R	.40	6.0	2		1	1	2	3		1			
23	30	Well Designed Chair		L	.85	7.0	2		2			1	1	2	1	1	
47		Poorly Designed Chair	Furniture	R	.15	3.7	3		3	1	2	1					
53	31	Bertoia Chair		R	1.0	8.0	1	1	1				2	1	2	2	
94		Bookcase	Furniture	L	.00	1.7	7	2	1								
34	32	Eskimo Graphic		L	.95	5.5		3	1		2			2			2
93		Gurian Dogs	Graphics	R	.05	2.0	5	1	3			1					
83	33	Renoir Little Girl		L	.65	6.5			2	1	2		1	2	1	1	
37		Two Girls	Paintings	R	.35	4.0	2		3	1	1	2				1	
91	34	Turner Harbor		L	.70	9.5				1	2	1	3			2	1
50		Japanese Ship	Paintings	R	.30	6.5		1	2	2	1		1	1		1	
73	35	Tamayo Guitar Player		R	.90	9.5				1	1	1	1		2	1	3
76		Siquires Flower Seller	Paintings	L	.10	7.0	1	1	2			1	3		1	1	
59	36	Bentwood Chair		L	.80	9.5		1		1			2		2	2	2
67		Office Chair	Furniture	R	.20	8.0	1	1		1	1		1	2	2		1
52	37	African Primitive		R	.85	9.5						1	1	1	4	1	2
31		Eskimo Primitive	Sculpture	L	.15	6.0		1	2	1	1	1		1	1		2
58	38	Picasso Portrait of a Woman		R	.85	8.0	1						4	2	1	1	1
64		Matisse Portrait of a Woman	Paintings	L	.15	5.0	1		3	1	1		3	1			

20 *R-L
18 *L-R

Data Sources

The ten art experts used to judge the original pool of stimulus slides for aesthetic quality included five college professors in the field of art education who also paint, one college design professor, one art deparment chairman, one water colorist, one design professor who is also a sculptor, one college graphic professor who is also an artist, and a designer craftsman in the field of plastics who is also a gallery director and art collector.

The five children who served as the pilot sample included boys and girls selected by their teacher to participate.

The boys and girls used in the final application were those who had been selected as participants in a larger experimental study designed to investigate the effects of special environment on cognitive development and aesthetic awareness. These forty children were solicited from four elementary schools near the university and comprised a volunteer population.

Results and Conclusions

The means, standard deviations, and reliabilities obtained with the larger sample are presented in Table 2.

The data from the pilot application clearly indicated that the scale was measuring something other than chance responses and was not too easy for young children. Because the items in

TABLE 2

Means, Standard Deviations and Reliabilities
Obtained from a Scale of Aesthetic Judgment
Administered to Four and Five Year Old Children

Sample	Testing	N	Mean	Standard Deviation	Split Half Reliability*	Test-Retest Reliability
Experimental	pre	18	18.6	4.0	.40	.54
	post		21.9	6.3	.51	
Control	pre	22	18.2	2.8	.01	.24
	post		17.8	4.6	.06	
Combined	pre	40	18.4	3.4	.07	.43
	post		19.7	5.5	.43	

*Coefficient alpha based on an odd-even split

the scale were constructed to contain pairs of stimuli perceived to be of differing aesthetic quality by a variety of art experts, it may be inferred that the scale is a valid measure of the extent to which young children make aesthetic judgments similar to those of current art experts. Although the reliability of the scale is not as high as desirable for yielding scores which can be interpreted on an individual basis, it is adequate for measuring group differences in research studies even with very young children with a relatively homogeneous socio-economic background.

Importance

If we are to trace and understand the influences on the development of aesthetic judgments made by human beings, it is essential to have a scale which can measure aesthetic preferences in very young children. It is also desirable that the scale include a variety of stimuli with which both children and adults might be familiar, so that, eventually, the same scale can be used with all age groups.

In so far as the authors are aware, no published scale of this type has been developed for use with four and five year old children. Although Childs has used a somewhat similar procedure to develop a test of aesthetic judgment which can be used with older children, the stimuli used consisted entirely of paintings.

Since aesthetic judgment includes responses to everyday items, it was felt that a new scale with broader sampling of stimuli was badly needed.